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Development of a Non-Holonomic Multi-Agent Robot Navigation System with Adaptive Formation Control

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The service of mobile robots is found in many ways in present activities when the accuracy, mobility and the safety cannot be assured by the human intervention. The biggest challenge we face is that the collaborative navigation of the multi-agent systems, which is very difficult to achieve in real world. Major reasons for this are the dynamical nature of mobile robots, the cooperated tracking and navigation, and the requirement of very accurate and reliable hardware, causing very high investment in developing stage [1]. On the other hand, the use of low cost hardware does not usually guarantee the expected results.